Cytotoxicity of aqueous and ethanolic extracts of ficus deltoidea on human ovarian carcinoma cell line

Abstract

Aims: This study was to investigate the cytotoxicity of both plant extracts from Ficus deltoidea (locally known as Mas Cotek), aqueous and ethanolic extracts on human ovarian carcinoma cells using standard colometric MTT assay. Study design: Cell based assay Place and Duration of Study: Institute of Bioproduct Development and Department of Bioprocess Engineering, Universiti Teknologi Malaysia, Johor Bahru, Malayisa between January 2007 and December 2009. Methodology: The biochemical responses of cells after plant sample treatment were observed and have been reported through several assays such as trypan blue exclusion assay for cell viability, analysis of glucose uptake and lactate release, cell survival evaluation and genomic assay through DNA fragmentation. Results: Both aqueous and ethanolic extracts of the plant sample gave IC50 value of 224.39 + 6.24 µg/ml and 143.03 ± 20.21 µg/ml, respectively. The detachment capability of the plant aqueous extract was observed in the cell viability assays. DNA fragmentation was not observed in the aqueous extract, but in ethanolic extract (1000 µg/ml). The DNA was fragmented around 200 Kbp. Morphological observation was carried out and apoptosis body was observed at 1000 µg/ml of both extract. Conclusion: A2780 cancer cells behaved differently on cell growth profile upon treating with different concentrations of the aquoues and ethanolic extracts of F. deltoidea. Even though both extracts could cause apoptosis at 1000 µg/ml, the aqueous extract prompted to promote cell detachment, and the ethanolic tried to inhibit cell proliferation through DNA fragmentation.